Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A system for extracting a gaseous fluid to be ~~analysed~~ analyzed from a process environment, comprising

a probe ~~(S)~~ for extracting said gaseous fluid, comprising a first tubular element ~~(2)~~, which can be positioned within the interior of the process environment, the ~~said~~ first tubular element having at one end a gas aspiration opening ~~(TS)~~ and defining an internal cavity ~~(CA)~~, and a second tubular element ~~(1)~~ extending within the cavity ~~(CA)~~ of the first tubular element ~~(2)~~, the ~~said~~ second tubular element being operable to inject the ~~said~~ gaseous fluid into the interior cavity ~~(CA)~~ towards the ~~said~~ aspiration opening of the first tubular element ~~(2)~~ and from there again into the process environment,

aspiration means ~~(40, C)~~ for aspirating the gaseous fluid from the process environment through the cavity ~~(CA)~~ of the ~~said~~ first tubular element ~~(2)~~ of the probe ~~(S)~~,

take off means ~~(41, PM)~~ connected to the ~~said~~ aspiration means ~~(40, C)~~ for taking off a fraction of the ~~said~~ gaseous fluid, the ~~said~~ take off means being further connected to analyzer means ~~(AG)~~ for analysis of the ~~said~~ gaseous fluid,

and

re-injection means ~~(50, C)~~ for re-injecting the ~~said~~ gaseous fluid into the process environment through the second tubular element ~~(1)~~,

~~characterized in that the~~ wherein said aspiration means ~~(40, C)~~ and the ~~said~~ re-injection means ~~(50, C)~~ share compressor means ~~(C)~~, said compressor means having an aspiration side and a delivery side, wherein the ~~said~~ first tubular element is fluidly connected to control valve means ~~(EV2G)~~ operable to fluidly connect said first tubular element selectively with one of the ~~said~~ aspiration side and said delivery side of the compressor means, and

~~in that~~ wherein the ~~said~~ second tubular element is disposed in fluid communication with the delivery side of said compressor means through a reservoir

~~(S2G)~~, the ~~said~~ second tubular element being throttled in such a way to accelerate the ~~said~~ gaseous fluid flowing through it and, at the same time, to allow an accumulation of the ~~said~~ gaseous fluid upstream within said reservoir,

in such a way that the system can assume an aspiration condition, wherein the gaseous fluid is aspirated through the ~~said~~ first tubular element and is partially re-injected through the ~~said~~ second tubular element and partially accumulated by the ~~said~~ reservoir, and a back washing condition, wherein the gaseous fluid is released by the ~~said~~ reservoir through the said first tubular element by means of activation of the ~~said~~ control valve means ~~(EV2G)~~.

2. (Currently Amended) A system according to Claim 1, ~~in which~~ wherein the end of the second tubular element ~~(1)~~ disposed on ~~the side of the aspiration opening, that is to say~~ a the process environment side of the aspiration opening, is provided with a nozzle ~~(UG)~~.

3. (Currently Amended) A system according to Claim 1 ~~or 2~~, in which the ~~said~~ first ~~(2)~~ and second ~~(1)~~ tubular element are coaxial.

4. (Currently Amended) A system according to Claim 3, ~~including~~ further comprising connector elements ~~(CR,T)~~, pierced nuts ~~(DT)~~ and gas tight seals operable to assemble the said first ~~(2)~~ and second ~~(1)~~ tubular element and to render the second tubular element ~~(1)~~ slidable with respect to the first tubular element ~~(2)~~.

5. (Currently Amended) A system according to ~~any preceding claim~~ claim 1, further ~~including~~ comprising a cooling jacket ~~(CRA)~~ disposed around the ~~said~~ first tubular element ~~(2)~~.

6. (Currently Amended) A system according to Claim 5, ~~in which~~ wherein the ~~said~~ cooling jacket is disposed in such a way as to define an inter space ~~(IN)~~ interposed between the ~~said~~ jacket and the first ~~said~~ tubular element ~~(2)~~.

7. (Currently Amended) A system according to Claim 5, wherein ~~or 6, in which~~ the ~~said~~ cooling jacket is assembled in a separable manner from the ~~said~~ first tubular element ~~(2)~~ of the probe ~~(S)~~.

8. (Currently Amended) A system according to ~~any of Claims from 5 to 7, in which~~ claim 5, wherein the ~~said~~ cooling jacket is connected in fluid communication with a low temperature refrigerator with a closed fluid circuit.

9. (Currently Amended) A system according to ~~any preceding claim~~ claim 1, further ~~including~~ comprising a shielding element ~~(CP)~~ disposed in proximity to the ~~said~~ aspiration opening ~~(TS)~~ .

10. (Currently Amended) A system according to ~~any preceding Claim~~ claim 1, further ~~including~~ comprising decanter means ~~(D)~~ and drying means ~~(RE)~~ disposed downstream of the probe ~~(S)~~ in such a way as further to reduce the dust and the condensate in the ~~said~~ gas.

11. (Currently Amended) A system according to ~~any preceding Claim~~ claim 1, further ~~including~~ comprising a vacuometer ~~(Vg)~~ connected to the first tubular element ~~(2)~~ of the probe ~~(S)~~ and a manometer ~~(Mg)~~ connected to the second tubular element ~~(1)~~ of the probe ~~(S)~~ for monitoring the operation conditions of the probe.

12. (Currently Amended) A method for extracting and re-injecting a gaseous fluid ~~to be analysed~~ from and to process environment, the ~~said~~ method using[[:]]

a probe ~~(S)~~ for extracting said gaseous fluid, comprising a first tubular element ~~(2)~~, which can be ~~position~~ positioned within the interior of the process environment, the ~~said~~ first tubular element having at one end a gas aspiration opening ~~(TS)~~ and defining an internal cavity ~~(CA)~~, and a second tubular element ~~(1)~~ extending within the cavity ~~(CA)~~ of the first tubular element ~~(2)~~, the ~~said~~ second tubular element being operable to inject the ~~said~~ gaseous fluid into the interior of the cavity ~~(CA)~~ towards the ~~said~~ aspiration opening of the first tubular element ~~(2)~~ and from there again into the process environment,

wherein the method ~~comprise~~ comprises the following ~~step~~ steps:

aspirating the gaseous fluid from the process environment through the cavity ~~(CA)~~ of the ~~said~~ first tubular element ~~(2)~~ of the probe ~~(S)~~,

taking off a fraction of the ~~said~~ gaseous fluid for analyzing ~~it~~ the gaseous fluid,

re-injecting the ~~said~~ gaseous fluid into the process environment through the ~~said~~ second tubular element ~~(1)~~ of the probe ~~(S)~~,

~~characterized in that the~~ wherein said gaseous fluid is only partially re-injected into the process environment, a portion of the gaseous fluid being accumulated apart, and

in that the method comprise a back washing step, wherein the accumulated gaseous fluid is released into the process environment through the ~~said~~ first tubular element.

13. (Previously Presented) A method to claim 12, wherein the said back washing step is preformed cyclically.

14. - 17. (Cancelled)